

Launch Mission Execution Forecast

Mission: Falcon 9 Transporter-4

Issued: 30 Mar 2022 / 0845L (1245Z)

Valid: 01 Apr 2022 / 1214 – 1234L (1614 – 1634Z)



Forecast Discussion: After a stretch of beautiful weather in East Central Florida, conditions will deteriorate by the end of the week as a strong area of high pressure slides off the Atlantic coast today. This, coupled with a strong low developing over the Midwest, will cause winds to increase and shift to the southeast this afternoon. The low will track to the east tomorrow, dragging a cold front across the Southeastern US. The front will bring generally unsettled weather by Friday, increasing cloud coverage along with shower and lightning chances. Thus, the primary concerns are the Cumulus Cloud Rule, Surface Electric Fields Rule, and the Thick Cloud Layers Rule.

For the backup day on Saturday, unsettled weather will remain in place as the front stalls out over Central Florida. Because of this, the POV and primary concerns are the same as on Friday's attempt.

There is still uncertainty regarding the location of the front on Monday. Most of the models do push it farther south, allowing for drier air to move in and favorable launch conditions. However, if it does linger in the area, this would keep the cloud cover and shower/lightning chances. The primary concern is the Cumulus Cloud Rule.

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Probability of Violating Weather Constraints								
60% Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule, Thick Cloud Layers Rule								
	Weather Conditions						Additional Risk Criteria	
Weather/Visi	bility:	Sct Showers /7 mi.	Туре	Clouds Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
Weather/Visibility		76°F / 80%	Cumulus	Scattered	2,500	15,000	Booster Recovery Weather:	Low
Liftoff Winds	(200'):	240° 15 - 20 mph	Altostratus	Broken	14,000	18,000	Solar Activity:	Low
Probability of Violating Weather Constraints								
60% Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule, Thick Cloud Layers Rule								
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Weather Weather Weather/Visibility: Sct Showers / 7 mi. Temp/Humidity: 76°F / 73%			Туре	Clouds Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low-Mod
Temp/Humidity:		76°F / 73%	Cumulus	ū	. ,	15,000	Booster Recovery Weather:	Low
Liftoff Winds	(200'):	090° 7 - 12 mph	Cirrostratus	Broken	20,000	24,000	Solar Activity:	Low
Probability of Violating Weather Constraints								
30% Primary Concerns: Cumulus Cloud Rule								
30% Primary Concerns: Cumulus Cloud Rule Weather Conditions							Additional Risk Criteria	
Weather/Visibility: None / 7 mi. Temp/Humidity: 75°F / 63%			Туре	Clouds Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
Temp/Humidity:		75°F / 63%	Cumulus	Scattered	3,000	8,000	Booster Recovery Weather:	Low
Liftoff Winds (200'): 070° 10 - 15 mph							Solar Activity:	Low
	60% Weather/Visi Temp/Humid Liftoff Winds 60% Weather/Visi Temp/Humid Liftoff Winds 30% Weather/Visi Temp/Humid	Weather/Visibility: Temp/Humidity: Liftoff Winds (200'): Weather/Visibility: Temp/Humidity: Liftoff Winds (200'): Weather/Visibility: Temp/Humidity: Liftoff Winds (200'):	Proba 60% Primary Concerns: Cum Weather Weather/Visibility: Sct Showers / 7 mi. Temp/Humidity: 76°F / 80% Liftoff Winds (200'): 240° 15 - 20 mph Proba 60% Primary Concerns: Cum Weather Weather/Visibility: Sct Showers / 7 mi. Temp/Humidity: 76°F / 73% Liftoff Winds (200'): 090° 7 - 12 mph Proba 30% Primary Concerns: Cum Weather Weather/Visibility: None / 7 mi. Temp/Humidity: 75°F / 63%	Probability of Vi 60% Primary Concerns: Cumulus Cloud R Weather Condition Weather/Visibility: Sct Showers / 7 mi. Type Cumulus Liftoff Winds (200'): 240° 15 - 20 mph Altostratus Probability of Vi 60% Primary Concerns: Cumulus Cloud R Weather Condition Weather/Visibility: Sct Showers / 7 mi. Type Cumulus Liftoff Winds (200'): 090° 7 - 12 mph Cirrostratus Probability of Vi 30% Primary Concerns: Cumulus Cloud R Weather Condition Weather/Visibility: None / 7 mi. Type Cumulus Cumulus Cumulus Cumulus Cumulus Cloud R	Probability of Violating W 60% Primary Concerns: Cumulus Cloud Rule, Surface Weather Conditions Weather/Visibility: Sct Showers / 7 mi. Type Coverage Liftoff Winds (200'): 240° 15 - 20 mph Altostratus Broken Probability of Violating W 60% Primary Concerns: Cumulus Cloud Rule, Surface Weather Conditions Weather/Visibility: Sct Showers / 7 mi. Type Coverage Cumulus Scattered Coverage Cumulus Cloud Rule, Surface Coverage Coverage	Probability of Violating Weather Weather Conditions Weather/Visibility: Sct Showers /7 mi. Type Coverage Base (ft) Clouds Coverage Base (ft) Cumulus Scattered 2,500 Coverage Base (ft) Cumulus Scattered 2,500 Probability of Violating Weather Probability of Violating Weather Probability of Violating Weather Cumulus Cloud Rule, Surface Electric Veather Conditions Weather/Visibility: Sct Showers / 7 mi. Type Coverage Base (ft) Cumulus Scattered 2,500 Probability of Violating Weather Coverage Base (ft) Coverage Base (ft)	Probability of Violating Weather Constrain Weather Conditions Weather/Visibility: Sct Showers /7 mi. Temp/Humidity: 76°F / 80% Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule, Scattered 2,500 15,000 Probability of Violating Weather Constrain Probability of Violating Weather Constrain Weather/Visibility: Sct Showers /7 mi. Type Coverage Base (ft) Tops (ft) Weather Conditions Weather/Visibility: Sct Showers /7 mi. Type Coverage Base (ft) Tops (ft) Temp/Humidity: 76°F / 73% Cinculus Scattered 2,500 15,000 Probability of Violating Weather Constrain Clouds Coverage Base (ft) Tops (ft) Type Coverage Base (ft) Tops (ft) Cirrostratus Broken 20,000 24,000 Probability of Violating Weather Constrain Weather Conditions Weather Conditions Weather Conditions Weather Conditions Weather/Visibility: None / 7 mi. Type Coverage Base (ft) Tops (ft) Type Coverage Base (ft) Tops (ft) Clouds Type Coverage Base (ft) Tops (ft) Coverage Base (ft) Tops (ft)	Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule, Thick Cloud Layers Rule Weather Conditions Weather Conditions Weather Conditions Weather/Visibility: Sct Showers / 7 mi. Type Coverage Base (t) Tops (t) Solar Activity: Probability of Violating Weather Constraints Finally Coverage Base (t) Tops (t) Solar Activity: Probability of Violating Weather Constraints Primary Concerns: Cumulus Cloud Rule, Surface Electric Fields Rule, Thick Cloud Layers Rule Coverage Base (t) Tops (t) Solar Activity: Weather/Visibility: Sct Showers / 7 mi. Type Coverage Base (t) Tops (t) Solar Activity: Weather/Visibility: 76°F / 73% Cumulus Scattered 2,500 15,000 Booster Recovery Weather: Solar Activity: Upper-Level Wind Shear: Temp/Humidity: 76°F / 73% Cumulus Scattered 2,500 15,000 Booster Recovery Weather: Broken 20,000 24,000 Solar Activity: Probability of Violating Weather Constraints Additional Risk Cr Upper-Level Wind Shear: Booster Recovery Weather: Solar Activity: Probability of Violating Weather Constraints Additional Risk Cr Upper-Level Wind Shear: Booster Recovery Weather: Solar Activity: Probability of Violating Weather Constraints Additional Risk Cr Upper-Level Wind Shear: Additional Risk Cr Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Type Coverage Base (t) Tops (t) Upper-Level Wind Shear: Temp/Humidity: 75°F / 63% Cumulus Scattered 3,000 8,000 Booster Recovery Weather:

Note: The Probability of Violation (POV) is the chance that a Lightning Launch Commit Criteria (LLCC) or certain user constraints (surface winds, precipitation, and temperatures, etc.) will be violated during the launch window. It does not take into account upper-level wind shear, booster recovery weather, and solar activity.

Next Forecast Will Be Issued

31 Mar 2022